



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,578	08/10/2001	Yu-Cheun Jou	PA010391	7879

23696 7590 09/14/2005

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

LUGO, DAVID B

ART UNIT PAPER NUMBER

2637

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,578

Applicant(s)

JOU, YU-CHEUN

Examiner

David B. Lugo

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/5/05 have been fully considered but they are not persuasive. With respect to claims 1, 13, 26 and 32, Applicant argues that Tran fails to disclose determining a gain level of the channel because a gain level is based on the combination of the power level and the data rate of the channel. This argument is not found persuasive. Tran discloses calculating a power up or power down command based on the rate of change of SIR. One of ordinary skill in the art would recognize that in the invention of Tran, the data rate of the channel is not altered during transmission power control. Applicant states in page 1, paragraph 2 of the instant application that "the power level and/or data rate of a communication channel may establish the gain level of the communication channel." Accordingly, it is not necessary for both the power level and the data rate to be altered in order to establish the gain level of the communication channel. Thus, generating a power up or power down command will result in establishing a gain level of the channel and a gain level being determined. Tran is thus considered to disclose: "determining a gain level of said communication channel."

With respect to claims 38 and 39, Applicant alleges that the Examiner has not addressed those claims in the detailed action. Applicant is respectfully pointed to paragraphs 39 and 43-47 of the previous Office action where claims 38 and 39 are explicitly addressed.

The rejection of claims 1-39 is maintained and restated below.

Drawings

2. As indicated in the previous Office action, Applicant is required to submit a complete set of new drawings because the drawings received 1/9/02 are not clearly legible (e.g., Figs. 2-6).

Art Unit: 2637

3. The drawing replacement sheet for Fig. 7 was received on 7/5/05. This drawing sheet is acceptable.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5-7, 10-15, 18-20 and 23-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Tran U.S. Patent 6,735,449.
6. Regarding claim 1, Tran discloses a method in a CDMA system where a rate of change of a signal to interference ratio of a channel received at a receiver is determined (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).
7. Regarding claim 2, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.
8. Regarding claim 5, when a power down command is generated, a power level of the channel is decreased accordingly (col. 8, lines 18-20).
9. Regarding claim 6, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

Art Unit: 2637

10. Regarding claim 7, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

11. Regarding claim 10, when a power up command is generated, a power level of the channel is increased accordingly (col. 8, lines 18-20).

12. Regarding claim 11, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

13. Regarding claim 12, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

14. Regarding claim 13, Tran discloses an apparatus 14 in CDMA system 10 comprising a receiver 32 for receiving signals along a communication channel, and a controller 36 that determines a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).

15. Regarding claim 14, the system 10 is a CDMA system (col. 5, lines 47-52).

16. Regarding claim 15, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

17. Regarding claim 18, when a power down command is generated, a power level of the channel is decreased accordingly (col. 8, lines 18-20).

Art Unit: 2637

18. Regarding claim 19, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

19. Regarding claim 20, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

20. Regarding claim 23, when a power up command is generated, a power level of the channel is increased accordingly (col. 8, lines 18-20).

21. Regarding claim 24, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

22. Regarding claim 25, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

23. Regarding claim 26, Tran discloses an apparatus 14 in CDMA system 10 including a controller 36 comprising a means 52 for determining a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45; col. 7, lines 39-56), and means 54 for determining a gain level of the channel based on the rate of change information (col. 8, lines 9-17).

24. Regarding claim 27, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

25. Regarding claim 28, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

26. Regarding claim 29, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

27. Regarding claim 30, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8; lines 9-17).

28. Regarding claim 31, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

29. Regarding claim 32, Tran discloses an apparatus 14 comprising a receiver 32 for receiving signals along a communication channel, and a controller 36 that determines a rate of change of a signal to interference ratio of a channel (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8).

30. Regarding claim 33, Tran states that when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level.

31. Regarding claim 34, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

32. Regarding claim 35, Tran states that when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

Art Unit: 2637

33. Regarding claim 36, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

34. Regarding claim 37, Tran further discloses generating a difference value, considered a mobility level, in difference calculator 46, where the gain level is based on the rate of change of the SIR depending on whether the mobility level meets a low mobility threshold (i.e. lies in region 68 between threshold levels $-T_1$ and T_2 – see Fig. 2).

Claim Rejections - 35 USC § 103

35. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

36. Claims 3, 8, 16, 21, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Baker et al. U.S. Patent Application Publication 2001/0036238.

37. Regarding claims 3, 8, 16 and 21, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that the gain margin corresponds proportionally to a magnitude of the rate of change of the SIR.

38. Baker et al. disclose a CDMA system where a rate of change of an SIR value is used to change power control parameters (page 2, paragraph 33), where if the rate of change is very large, the power control parameters are adjusted proportionately (page 3, paragraph 36).

39. It would have been obvious to one of ordinary skill in the art to use the teachings of Baker et al. of generating power control parameters according to the magnitude of the rate of

Art Unit: 2637

change of SIR, in the system of Tran, to ensure that the most appropriate settings for the power control parameters are utilized (see page 2, paragraph 33).

40. Regarding claim 38, Tran discloses a method in a CDMA system where a rate of change of a signal to interference ratio of a channel received at a receiver is determined (col. 3, lines 36-45) via change rate calculator 52 (col. 7, lines 39-56), where the rate of change is used to calculate a power up/down command, thereby determining a gain level of the channel (col. 8, lines 1-8). Further, when the rate of change is greater than zero, a power down command is generated (col. 8, lines 5-6), resulting in a value being subtracted from the current gain level to produce a final gain level, and when the rate of change is less than zero, a power up command is generated (col. 8, lines 6-8), resulting in a value being added to the current gain level to produce a final gain level.

41. Tran does not expressly disclose that the gain margin corresponds proportionally to a magnitude of the rate of change of the SIR.

42. Baker et al. disclose a CDMA system where a rate of change of an SIR value is used to change power control parameters (page 2, paragraph 33), where if the rate of change is very large, the power control parameters are adjusted proportionately (page 3, paragraph 36).

43. It would have been obvious to one of ordinary skill in the art to use the teachings of Baker et al. of generating power control parameters according to the magnitude of the rate of change of SIR, in the system of Tran, to ensure that the most appropriate settings for the power control parameters are utilized (see page 2, paragraph 33).

44. Regarding claim 39, Tran discloses that the power levels of the communication signals are transmitted at the final level after power control is performed (col. 8, lines 9-17).

Art Unit: 2637

45. Claims 4, 9, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran in view of Ue et al. U.S. Patent 6,400,929.

46. Regarding claims 4 and 17, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that subtracting a gain margin includes increasing a data rate of the channel.

47. Ue et al. disclose a device for controlling transmission power where a transmission rate is increased when the channel condition is determined to be good (col. 7, lines 18-25, Fig. 14).

48. It would have been obvious to one of ordinary skill in the art to provide transmission power control by changing the transmission rate because it allows for such control without being affected by the environment of the mobile or transmission rate (see Ue et al., col. 1, lines 55-60).

49. Regarding claims 9 and 22, Tran discloses a CDMA system for determining a gain level based on a rate of change of a signal to interference ratio as described above, but does not expressly disclose that adding a gain margin includes decreasing a data rate of the channel.

50. Ue et al. disclose a device for controlling transmission power where a transmission rate is decreased when the channel condition is determined to be bad (col. 6, lines 65-67, Fig. 12).

51. It would have been obvious to one of ordinary skill in the art to provide transmission power control by changing the transmission rate because it allows for such control without being affected by the environment of the mobile or transmission rate (see Ue et al., col. 1, lines 55-60).

Conclusion

52. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2637

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo
9/7/05


KHAI TRAN
PRIMARY EXAMINER